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TITLE: Taurolidine, an analogue. . .
AUTHOR: Bedrosian, I.; et al
SOURCE: **Cytokine, (1991) 3, 568-575.**

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TITLE: Implantation of metastasis. . .
AUTHOR: Jacobi C A; et al
SOURCE: **Surg. Endosc., (1995) 9, 351-2.**

TITLE: Sustained anti-adherence activity. . .
AUTHOR: Blenkhams, J.; et al
SOURCE: **J. Pharm. Pharmacol., (1988) 40, 509-511.**

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Thank you very much.

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COMPLETED

Implantation metastasis of unsuspected gallbladder carcinoma after laparoscopy

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Received: 27 September 1993/Accepted: 22 February 1994

Abstract: In a 73-year-old woman elective laparoscopic cholecystectomy for symptomatic cholelithiasis had to be changed to open cholecystectomy because of technical problems. Unsuspected microscopic adenocarcinoma of the gallbladder was found after operation. Two months later abdominal-wall metastasis developed at the periumbilical and the right abdominal laparoscopic tract through which the laparoscope and instruments had been introduced and removed. The paramedian abdominal wall incision for the laparotomy was free of tumor.

Key words: Laparoscopy — Laparoscopic cholecystectomy — Tumor seeding — Laparoscopic tract

Malignant seeding of laparoscopic tracts is not unusual in tumor patients. Most frequently it has been described as a consequence of laparoscopy for staging in gynecologic malignancies [2,8]. Furthermore, it has been reported after percutaneous endoscopic gastrostomy [5,7], needle aspiration biopsy of lung cancer [9], and percutaneous transhepatic cholelithiasis [10]. Until now just one case of umbilical metastasis after laparoscopic cholecystectomy for unsuspected gallbladder carcinoma has been reported. [1]. We saw a patient with implantation metastases of the abdominal wall after open cholecystectomy for the diagnosis of cholelithiasis as a consequence of technical problems during laparoscopic surgery. After the operation implantation metastasis developed at the umbilical optical and right abdominal laparoscopic tract.

Case report

A 73-year-old woman suffered from typical symptoms of cholelithiasis for years with an increase of colicky pain and tenderness on pressure in the right abdomen for 2 weeks. Neither jaundice nor

other signs of cholestasis had ever existed. Abdominal ultrasonogram revealed cholelithiasis, a diffusely thickened wall of the gallbladder, and normal hepatic structure. Laboratory studies showed normal values, with serum transaminase and bilirubin levels within the normal range. Intravenous cholecystogram confirmed the ultrasonographic findings and laparoscopic cholecystectomy was planned.

Carbon dioxide was used to establish pneumoperitoneum. A 1.5-cm transverse skin incision was made just below the umbilicus and the laparoscope with attached video camera was introduced into the abdominal cavity. Additional trocars were placed under endoscopic guidance at the right anterior axillary side, in the left epigastrium, and pararectal on the left side. On inspection the gallbladder was fibrotic and showed adhesion to the greater omentum. Fixing the gallbladder with the grasping forceps was not possible because of hard consistency. Endoscopic paracentesis of the gallbladder did not improve the situation. Therefore the procedure was changed to open cholecystectomy. All endoscopic instruments were removed and uncomplicated open cholecystectomy was performed. After the operation unsuspected carcinoma of the gallbladder was identified by histological examination of the specimen: adenocarcinoma with involvement of mucosa with free serosal surface (stadium II, TNM classification [3]). Two months later periumbilical swelling was recognized by the patient. On physical examination a tumor of hard consistency in the infraumbilical incision was found (Fig. 1). Computerized tomography of the abdomen showed local recurrence of the tumor in the area of the porta hepatis without infiltration of the liver, as well as two solitary metastases of the abdominal wall in the right side and the umbilical laparoscopic tracts (Fig. 2). The incision for laparotomy did not show any signs of tumor seeding. Resection of the metastases of the abdominal wall was performed and histological review confirmed the diagnosis of metastatic carcinoma of the gallbladder (Fig. 3). The postoperative course was uneventful.

Discussion

The case reported is a rather unusual situation that has not been reported so far. Clair et al. (1993, [1]) reported a case of rapid development of umbilical metastasis after laparoscopic cholecystectomy for unsuspected gallbladder carcinoma [1]. In this case the gallbladder was removed through the infraumbilical incision—a manipulation which may explain tumor seeding in the laparoscopic tract. Obviously even minor instrumentation can cause tumor seeding in laparoscopic tracts. In our case implantation metastasis in the right laparoscopic tract might be due to paracen-

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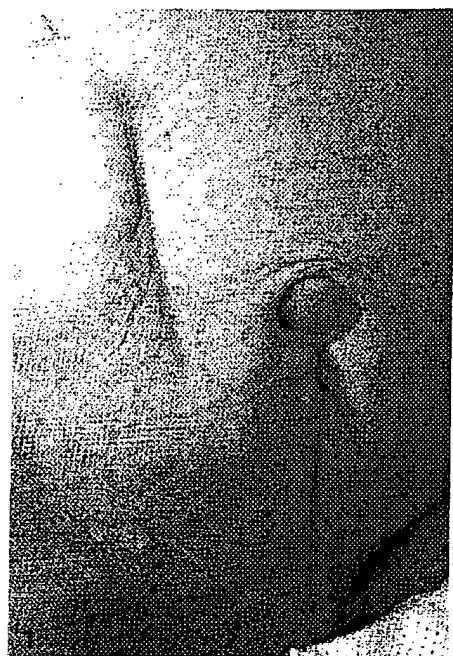


Fig. 1. Abdominal wall with implantation metastasis in the infraumbilical incision.



Fig. 2. Computerized tomography of the abdomen (metastasis tumor in the infraumbilical laparoscopic tract).

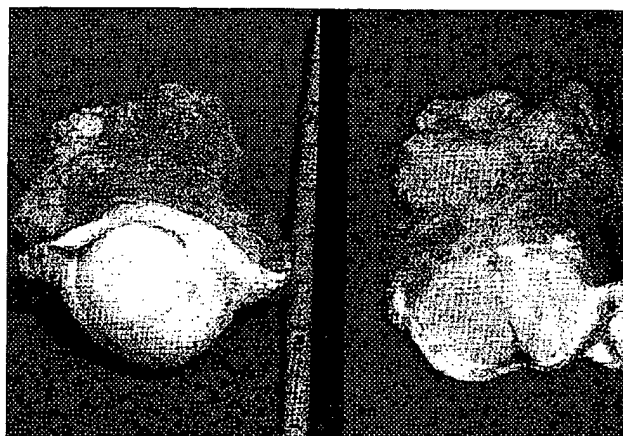


Fig. 3. Umbilical metastasis after excision.

testis of the cancerous gallbladder. Although the laparoscope had never been in direct contact with the malignancy, tumor seeding occurred in its insertion side. Nevertheless, the metastatic disease must be due to the instrumentation during laparoscopy, because implant metastases occurred only along the endoscopic tracts and not in the incision for open cholecystectomy.

Obviously, laparoscopic tracts are highly susceptible to metastatic tumor growth [7-10]. This might be because laparoscopic peritoneal perforation usually is not closed after the removal of the instruments, as is regularly done after laparotomy. The malignant cells grow in an area of high proliferation caused by healing. Other than excising the metastasis no other therapeutic or prophylactic concepts have been developed so far. Preventive irradiation or the application of local chemotherapy may be considered.

As laparoscopic techniques become more and more popular, the formation of metastatic disease within laparoscopic tracts cannot be avoided, because quite often—as in the situation described—the malignancy is unsuspected. In case of cholecystolithiasis it must be expected in just 2% of all patients [4, 6]. Nevertheless, planning endoscopic operations should include careful consideration of any sign of malignancy.

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